ENTREPRENEURIAL LEADER, ENTREPRENEURIAL ORIENTATION AND STRATEGIC ALLIANCES IN SME: EXPLORING THE LINKAGES

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Introdução

Although the research field on entrepreneurship and alliances provides valuable information on the basis of knowledge exploitation, there are a limited number of studies related to Strategic Alliances (SA) and Entrepreneurial Orientation (EO), especially in the case of Small and Medium-sized Enterprises (SME). It should be noted that the SME are the driving force of the Brazilian economy. SAs represent a source of competitive advantage in the marketplace for both large firms and SMEs, however we do not have a clear understanding of what can really bring them about by the paradigm of EO.

Problema de Pesquisa e Objetivo

The aim of this study is to look at the multidimensionality of the EO construct, designing a conceptual mechanism that illustrates the impact EO has on SA (and the role of the entrepreneurial leader on this relationship in the case of SME), the mediating effect of firm-size, and to tease out a novel aspect for the literature on EO to answer the following questions: Does the five EO dimensions autonomy, risk-taking, proactiveness, innovativeness and competitive aggressiveness influence SA for the SME? If not all the five EO dimensions are linked to SA, which factors could be influencing it?

Fundamentação Teórica

SAs refer to the way key business positions can be strengthened by forming partnership with strategic third parties and suppliers, as well as to their ability to keep them over time as a way of overcoming uncertainties and building barriers to entry (Sarasvathy, 2001). In this way, alliances can be of equal or greater importance to EO firms (Alvarez et al., 2006). EO is a strategic process where the conceptual domain includes some performance indicators and related managerial preferences, beliefs and behaviors expressed by the company's top management (Covin, Green, & Slevin, 2006).

Metodologia

A quantitative survey with 104 Brazilian firms was carried out to test the formulated hypotheses which was analyzed by structural equation modeling. The target population – leader was determined for this research study and comprised: owners, presidents, vice-presidents and/or directors. Data were collected from randomly selected firms to measure the five dimensions of the independent variable EO, the dependent variable (SA), and the antecedent EO variable – EL. Established multiple-item scales were used and the items in the scales were randomly ordered to reduce the survey bias.

Análise dos Resultados

This study found that there is a relationship between EO and SAs as two dimensions (A and RT) of the EO construct five dimensions showed a positive and significant relationship with SA. The results of the relationship between these two dimensions of EO (A and RT) and SA were affected by the EL, which in fact comprises five EO dimensions (A, RT, CA, I and PA) and acted as mediator between EL and SA. Moreover, our findings shed light on the argument of Covin and Lumpkin (2011) that the EO is a multidimensional construct which is influenced by the company's EL, extending previous study.

Conclusão

The result of this study, together with Oliveira Junior et al. (2016) are consistent with the notion that firms with EO may increase the probability of SA formation. Admittedly not all of the EO dimensions directly affected the SA, but this does not imply that EO is not important to SAs since according to the definition of EO given by the Lumpkin and Dess' (1996). In fact, CA and PA do have a relationship with SAs when account is taken of the indirect effect of the firm-size. Entrepreneurial leader influenced all the EO dimensions (A, RT, CA, I and PA) acting as mediator of EO-SA relationship.

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ENTREPRENEURIAL LEADER, ENTREPRENEURIAL ORIENTATION AND STRATEGIC ALLIANCES IN SME: EXPLORING THE LINKAGES

Although the research field on entrepreneurship and alliances provides valuable information on the basis of knowledge exploitation, there are a limited number of studies related to Strategic Alliances (SA) and Entrepreneurial Orientation (EO), especially in the case of Small and Medium-sized Enterprises (SME). It should be noted that the SME are the driving force of the Brazilian economy and represent a major source of income and employment for the population. The power of the SME in Brazil is evident from the fact that it contributed 30% of the gross domestic product (PricewaterhouseCoopers, 2013) of US$ 1.8 trillion in 2015, making the country the ninth biggest economy in the world (International Monetary Fund, 2016). The SMEs in Brazil are the sector that employs most people: 10.3 million of small-sized and 5.5 million of medium-sized enterprises (PricewaterhouseCoopers, 2013). However, in 2013 the mortality of all Brazilian enterprises was 18.3% and for micro and small-sized enterprises, it was 24.4% (IBGE, 2015). This mortality of the Brazilian SME raises several challenges for its owners (entrepreneurs) and all the stakeholders involved. From the standpoint of entrepreneurship, firms must differentiate themselves from their rivals, have more EO and find ways to achieve a sustainable development, for example, through the SA.

SME are characterized by their small scale, personality, independence and diversity since these features provide them with good flexibility, autonomy and closeness to their clients. However, SMEs face challenges and peculiar problems which make it difficult to form SAs. Thus, a better understanding of this phenomenon is required as well as how an EO of SME related to SA can allow academics and practitioners to employ effective strategies, increase efficiency to obtain a competitive advantage and improve the vitality and sustainability of the SME (Franco & Haase, 2015). Overall, our belief is that the SME which effectively integrate EO to SA, are well positioned to create wealth on a continuous basis.

The aim of this study is to extend and add to the literature in the following ways: by looking at the multidimensionality of the EO construct (Lumpkin & Dess, 1996; Covin & Lumpkin, 2011), designing a conceptual mechanism that illustrates the impact that EO has on SA (and the role of the entrepreneurial leader on this relationship in the case of SME), the mediating effect of firm-size, and to tease out a novel aspect for the literature on EO (Marino et al., 2002; Teng, 2005; Menz, 2012; Franco & Haase, 2013; Brouthers, Nakos, & Dimitratos, 2014; Shu et al., 2014; Oliveira Junior et al., 2016). To achieve these goals, we adopted a quantitative approach that involved structural equation modeling, to answer the following questions: Does the five EO dimensions [autonomy (A), risk-taking (RT), proactiveness (PA), innovativeness (I) and competitive aggressiveness (CA)] influence SA for the SME? If not all the five EO dimensions are linked to SA, which factors could be influencing it? Is the relationship between EO and SA influenced by the antecedent of EO (leader)? In this article, in an attempt to overcome some of the limitations of the prevailing theory, we adopt a new approach to explain how firms with EO relate to SAs for SMEs.

SAs represent a source of competitive advantage in the marketplace for both large corporations and SMEs (Das & Rahman, 2010), largely because of the economic value generated by the SA of entrepreneurial companies (Alvarez & Barney, 2001). The greatest benefit of alliances to organizations is that they provide the resources and capabilities required to compete in the marketplace, and thus reducing barriers to entry (Hitt et al., 2001; Robson, Skarmeas, & Spyropoulou, 2006). Nonetheless., more than half of the alliances are doomed to failure (Wittmann, 2007). Given the degree of popularity that the SAs have, it is still surprising that we do not have a clear understanding of what can really bring them about, simply by employing the paradigm of EO (Teng, 2005), especially for SMEs.

Oliveira Junior, Borini, Bernardes and Oliveira (2016) found that firms with risk-taking capability is more likely to form SA, and four of five EO dimensions (A, RT, CA and PA)

mediated the relationship between the top management team and SA. However, the implications of the absence of others EO dimensions (A, CA, I and PA) influence on SA and the innovativeness of the mediation effect to top management team on SA relationship was not clear. Moreover, Oliveira Junior et al. (2016) did not investigated how the firm-size can influence the EO-SA relationship, specially for the case of SME. The probability of EO-SA relationship may come from the mediation effect of firm-size. Alternatively, the SAs between firms may accrue only to a subset of firms. In this article we examine the firm-size implications of the EO effect on SA. Oliveira Junior et al. (2016) suggest that firms with Lumpkin and Dess' (1996) EO can improve SAs in two ways. First, risk-taking propensity may reduce the entrance barriers to SA, making it more accessible. Second, the top management team can lead the firm to engage in a risk behavior that results in the creation of SA. In both cases, the resulting SAs become more consistent for firms with EO (risk-taking) than when they are not. By extending this research to an examination of the firm-size effect, we hope to demonstrate an interesting and important phenomenon, to provide some insights that will aid in developing an improved understanding of the underlying EO-SA process, and to highlight some interesting new directions for future research in the field.

Thus, the first contribution that can be expected are (i) to investigate alternative models of the EO-SA relationship that can explain why some EOs affect SAs and others not by the mediating effect of firm-size. The second benefit is (ii) to provide a rationale for the relationship between Lumpkin and Dess' (1996) EO competitive value and its effects on a firm's growth patterns, by leveraging resources and capabilities through SA for SME. Finally, (iii) to show the existence of the antecedent of the EO (entrepreneurial leader) and its effect on the relationship between all five EO dimensions and SA for SME; this can help by incorporating the leader (top management) into the entrepreneurship literature (Menz, 2012).

STRATEGIC ALLIANCES

SAs refer to the way key business positions can be strengthened by forming partnership with strategic third parties and suppliers, as well as to their ability to keep them over time as a way of overcoming uncertainties and building barriers to entry (Sarasvathy, 2001). In this way, alliances can be of equal or greater importance to EO organizations (Alvarez et al., 2006).

SAs help specially SMEs, by providing opportunities to learn new skills, adapting to the technological discontinuities created by the introduction of a new and radical technology, or by reducing the costs and risks arising from innovation (Hitt et al., 2001). Moreover, SMEs that have great research and development capabilities are in a strong position to take advantage of the research knowledge of their alliance partners, adapt products to customer needs and wants and improve technology (Brouthers et al., 2014). In their study, O'Dwyer and O'Flynn (2005) show that SAs between multinational corporations and SMEs, also have a strategic value for both firms, especially in identifying the predominant knowledge supplier. With regard to the alliances between multinationals and SMEs, the multinationals generally have strategic motivations, whereas the SMEs are generally driven by short-term commercial considerations. The multinationals have a high absorptive capacity whereas the SMEs have a low absorptive capacity and are driven by external forces (O'Dwyer & O'Flynn, 2005).

The taxonomy of SME alliances can be divided into four types: (1) strategic, (2) improvised, (3) exploratory, and (4) deliberative (Franco & Haase, 2015). Strategic alliances are characterized as well-defined goals and strategies where a partner is carefully selected. Improvised alliances are more spontaneous and formed without taking account of important factors for the success of the partnership and thus may lead to a high risk of failure. Deliberative and exploratory alliances are types of specific inter-firm cooperation which include some important key factors for successful alliances, but are less target-orientated and have strategic deficits (Franco & Hass, 2015). SMEs can compete more efficiently and

effectively with large corporations if they adopt SAs. This is especially the case in competitive and emergent markets, where SMEs must form alliances to create economy of scale, increase their innovativeness, mitigate business risks, and creating value (Zhao, 2014).

Value creation is not an easy task, but can be facilitated by the prosperity of both partners and competitors in a multi-organizational environment (Han et al., 2012). This is particularly important with regard to new business since they usually have limited resources and value creation can raise their chances of surviving and achieving success (Hitt et al., 2001). One of the advantages of a partnership between an SME and large corporation is that it would provide access to financial capital or the international market (Alvarez et al., 2006). In addition, a large portfolio allows exposure to a wider range of resources, and provide expertise in the 'effect of scale' on the organization's development and growth (Yli-Renko & Janakiraman, 2008). The members of this partnership may have both non-economic (learning opportunities, better dynamic and market development) and economic benefits (increased revenue). Despite these considerations, the links between alliances and entrepreneurship have attracted little attention from the academic community (Alvarez et al., 2006).

ENTREPRENEURIAL ORIENTATION

EO is a strategic process where the conceptual domain includes some performance indicators and related managerial preferences, beliefs and behaviors expressed by the company's top management or leaders (Covin, Green, & Slevin, 2006). EO has attracted a good deal of both conceptual and empirical attention in research on entrepreneurship, as it represents one of the few areas where a cumulative body of knowledge has been acquired (Rauch et al., 2009) and the literature suggests that organizations with higher EO tend to perform better (Miller, 1983; Covin & Slevin, 1991; Zahra & Covin, 1993; Wiklund & Shepherd, 2005; Rauch et al., 2009). In view of this, the time is ripe to review, and evaluate, the documentary evidence, and cumulative knowledge of the relationship between EO and other variables, besides the performance of the firm (Anderson et al., 2014). Organizations which possess EO have several benefits and it is worth highlighting the fact that EO has a positive impact on financial performance in the following ways: it is positively associated with growth, is a means of discovering new opportunities, makes it easier to differentiate between and create competitive advantages, reduces or eliminates uncertainties, and builds market entry barriers, among other factors (Miller, 1983; Covin & Slevin, 1991; Zahra & Covin, 1993; Wiklund & Shepherd, 2005; Teng, 2005; Rauch et al., 2009; Franco & Haase, 2013).

There are two main categories of the EO construct. Unidimensional, related to Miller's (1983) and Covin and Slevin's (1989) work, and multidimensional, related to Lumpkin and Dess' (1996) view. Miller's (1983) and Covin and Slevin's (1989) concept is the dominant view of EO in the literature as two meta-analyses showed (Rosenbusch, Rauch, & Bausch, 2013; Rauch et al., 2009). We thus ground our discussion on the Lumpkin and Dess (1996) conceptualization, which needs to be more fully defined. When Anderson et al. (2014) outlined a reconceptualization of EO, they suggested that there is a nomological error in the literature on EO due to a measurement model misspecification with regard to Miller's (1983) and Covin and Slevin's (1989) conceptualization, which raises the question of what it means to be entrepreneurial at the level of a firm. According to the view of Lumpkin and Dess (1996) which is supported by Covin and Lumpkin (2011), EO is a multidimensional construct that represents real phenomena and, as such, should be measured with a reflexive model. EO exists as either a continuous variable or as a set of variables, represented by five dimensions. Thus, we adopt Lumpkin and Dess' (1996) definition of EO and Covin and Lumpkin's (2011) propositions.

Autonomy (A) refers to the independency of action of individuals or groups that allows them to come up with an idea or view and fully develop it (Lumpkin & Dess, 1996). Miller

(1983) showed that in the case of small entrepreneurial firms and planned businesses, the high level of entrepreneurship was associated with presidents who maintained a strong central authority and also acted as leaders because they knew the markets and emerging technologies. Covin et al. (2006) suggest that EO has a positive effect on sales growth when major strategic and operational decisions are made in an authoritarian manner. However, few studies in the EO literature have treated autonomy as an effective EO dimension.

Competitive aggressiveness (CA) reflects the company's ability to be directly and radically competitive when entering a market so that it can improve its position and overtake its rivals in the industry. CA is characterized as having the courage to be prepared for a direct confrontation. It also reflects the desire to be unconventional (Lumpkin & Dess, 1996). Covin and Slevin (1989) showed that small businesses in hostile environments generally perform better when they demonstrate a high degree of CA. Moreover, Covin and Covin (1990) suggests that CA is an effective strategic approach for firms with more than 30 employees. Ferrier's (2001) suggests that a firm's performance is bound to sustain a high level of CA. Ferrier et al. (2002) traced a direct link between a firm´s low performance and CA. Oliveira Junior (2015) shows that CA has a positive and significant impact on the firm's performance, but this impact does not vary between medium/large versus micro/small-sized enterprises.

Risk taking (RT) refers to the willingness to incur higher debts or to commit a significant amount of resources, when seeking high returns, by seizing opportunities and acting with courage even when a successful outcome is not certain (Lumpkin & Dess, 1996). Covin and Slevin (1989) state that the attributes that appear to lead to high performance in the case of small businesses in hostile environments are: organizational structure, entrepreneurial strategic positioning, a competitive profile which involves adopting a long-term goal/oriented approach by the top management, high pricing for products and services, and remaining oriented to industrial concerns and trends. In benign environments: a mechanical structure, strategic positioning and a competitive conservative profile, risk-averse financial management, an emphasis on profitability in the short term, development and improvement of existing products and services and strong dependence on individual customers to boost income from the company's sales. Lumpkin and Dess (1996) argue that researchers have failed to find a consistent pattern in the relations between RT and entrepreneurship for SMEs.

Innovativeness (I) reflects the tendency of a company to support and be involved in new ideas, uniqueness, experiments and creativity which may result in new products, services or technological systems (Lumpkin & Dess 1996). Shane (2001) showed that a new company is more likely to be created when it can operate in a new technical field. Ahuja and Lampert (2001) argue that trying out new, emerging and pioneering technologies can be a way for organizations to overcome the pitfalls of familiarity, brand affinity and maturity that characterize existing technology. Miller and Friesen (1982) suggests that the determinants of product innovation are largely due to the conservative model adopted by the firm. Yli-Renko and Janakiraman (2008) point that a large dependence on one or a few customers affects the development of new products, and increases the chances of risk, especially in the case of companies with limited resources. Others believe that the success of innovativeness allows the firm to provide new directions for the development of the industry (Hitt et al., 2001).

Proactiveness (PA) refers to the process of seeking to anticipate and act upon future needs, search for new opportunities that may or may not be related to the current line of operations, and introducing new products/trademarks ahead of those of competitors. (Venkatraman, 1989). Barney (1991) points out that the advantage of being proactive can only be fully exploited if the first company to implement the strategy has unique features. Accordingly, PA can be seen as an intention on the part of the company to influence the environment and initiate change. The long-term policy becomes increasingly important for the company and encourages it to engage in activities that cause change, lead to new strategic

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choices and even map out one's future life through the design of new products, services and even industries that do not yet exist (Sandberg, 2002).

ENTREPRENEURIAL ORIENTATION AND STRATEGIC ALLIANCES

Research into the question of how EO can be found in SAs has adopted different approaches, like EO and SA institutional theory (Marino et al., 2002) and EO theory (Teng 2005), collaborative entrepreneurship (Franco and Haase 2013), international performance and marketing alliances (Brouthers, Nakos and Dimitratos 2014) and the knowledge spillover theory of entrepreneurship (Shu et al. 2014). These have been employed to study a) the relationship between EO and SAs, b) Top management and Lumpkin and Dess' EO and SA (Oliveira Junior et al. 2016). Most of them (Marino et al. 2002; Franco and Haase 2013; Brouthers, Nakos and Dimitratos 2014; Shu et al. 2014; Oliveira Junior 2016) found support for their hypotheses, but only one study (Oliveira Junior et al. 2016) investigated the direct effect of EO from the perspective of Lumpkin and Dess (1996) as being a multidimensional construct. However, the study of Oliveira Junior et al. (2016) did not find support for their theory that all five EO dimensions can be linked to SAs, especially in the case of SMEs.

In corroborating the theory that SAs are important to entrepreneurial institutions, Han et al. (2012) showed that companies can achieve significant and abnormally positive returns when their participation in collaborative innovation alliances is publicly announced. In contrast, the results from Montoro-Sánchez et al. (2009) suggest that capabilities and not financial and physical resources are the determining factors in the choice of an alliance. Marino et al. (2002) showed that there is a relationship between unidimensional EO (RT, innovativeness and proactiveness) which was linked in a positive way to SAs. Franco and Haase (2013) confirmed that innovativeness was positively related to SA. Brouthers, Nakos and Dimitratos (2014) supported the theory that participation in research or marketing alliances had a positive moderating effect on the relationship between EO and international performance. Shu et al. (2014) found that a focal firm's EO (RT, innovativeness, proactiveness and CA) was positively related to knowledge spillovers in an alliance. Oliveira Junior et al. (2016) found support for the view that there existed a relationship between RT and SA. In the light of these findings, we propose the following hypothesis 1 (H1):

H1a: There is a positive relationship between (A) and SA.
H1b: There is a positive relationship between RT and SA.
H1c: There is a positive relationship between CA and SA.
H1d: There is a positive relationship between (I) and SA.
H1e: There is a positive relationship between PA and SA.

However, as Lumpkin and Dess (1996) point out, it is not necessary for all five EO dimensions to be present in a firm before it can be regarded as entrepreneurially orientated. This implies that in the case of the EO-SA relationship, not all the EO dimensions can influence the SA. With regard to strategy and entrepreneurship, Dess et al. (1997) and Covin et al. (2006) state that the industry and size of the firm can influence the dimensions of interest of EO. For example, Dickson et al. (2006) carried out a study of 456 SMEs in eight countries and found that the resource base of a SME, when measured by its size, moderates the relationship between technology and the prevailing culture of its domestic market, thus raising concerns about opportunistic behavior arising from a partnership with an SME. In the case of small enterprises, the more favorable the environment for R&D (research and development), the lower the perception of opportunism. With regard to medium-sized enterprises, opportunism increases when there is a greater concentration on R&D. In our view, the firm-size can influence the relationship between EO-SA, since the company acts as a mediator of this relationship. The mediation effect of the firm-size will be used in

alternative models to explain the absence of any influence of EO dimensions on SA, in the discussion section. Hence, we propose the following hypothesis 2 (H2):

> H2a: Firm-size mediates the relationship between A and SA.
> H2b: Firm-size mediates the relationship between RT and SA.
> H2c: Firm-size mediates the relationship between CA and SA.
> H2d: Firm-size mediates the relationship between I and SA.
> H2e: Firm-size mediates the relationship between PA and SA.

We propose hypothesis 3 (H3): There is relationship between firm-size and SA.

ENTREPRENEURIAL LEADER AS THE ANTECEDENT OF EO

There are various definitions of entrepreneur and it is always a problem in the study of entrepreneurship (Gartner, 1985). An entrepreneur can be considered as innovator, risk aversive, who initiates changes, creates new opportunities that in the long term cause economic growth. Entrepreneurial leader (EL) is defined here as the entrepreneurial behavior of the leader (or top management) who is responsible for one or more functional areas in his/her organization (Menz, 2012; Filion, 2000; Gartner, 1985). In this study, we differentiate the leader from the standard way of acting as an entrepreneur or manager (Gartner 1985). In this context, the view of entrepreneurship within the managerial team, plays an important role for firms, especially those with EO and SME.

What drives SME leaders to be entrepreneurial is not fully developed, and there are a scarcity of studies investigating this relationship (Alam, 2015). Moreover, it is particularly unclear how the EL influences firms' EO (Gartner, 1985; Simsek, Heavey, & Veiga, 2010; Oliveira Junior et al., 2016) hence, SAs. The simplest reason for the organizations to decide not to form a partnership is the lack of a strategy for alliances from the leaders' standpoint. This decision is a strategic choice (Wittmann 2007). Thus, the figure of the EL is important for decisions about SAs. Alam et al. (2015) indicate that personal values and the self-efficacy (individuals' beliefs) of the entrepreneur are related to EO of Malay SMEs. Where the role of the Estonian entrepreneurs in an entrepreneurial firm through participative knowledge sharing or in an individualistic way depends on her/his EO (Elenurm, 2012). Altinay and Wang (2011) suggest there is a relationship between Turkisk ethnic entrepreneurs' socio-cultural characteristics and EO for small-size firms with EO.

Following Gartner's (1985) and Menz's (2012) suggestions and the result of previous work relating entrepreneur and EO (Alam, 2015; Elenum, 2012; Altinay & Wang, 2011) we argue that EL is important to SA, but not so a company can act as a moderator between EO and SAs as some studies (Lumpkin & Dess, 1996; Messersmith & Wales, 2011) have suggested when analyzing the EO and the firm's performance. We followed the suggestions of Burgelman (1983), Gartner (1985), Menz (2012), Miller (1983), Oliveira Junior et al. (2016), and Simsek, Heavey and Veiga (2010) who express the view that the leader is the company's heart, and acts as the antecedent of the EO-SA relationship. In our opinion, EL is important for decision-making about the SAs. However, it can be claimed that EL is also important to develop and maintain an EO, meaning that EL would anticipate the EO conditions which would facilitate to SAs. Hence, we propose hypothesis 4 (H4):

> H4a: There is a positive relationship between EL and A.
> H4b: There is a positive relationship between EL and RT.
> H4c: There is a positive relationship between EL and CA.
> H4d: There is a positive relationship between EL and I.
> H4e: There is a positive relationship between EL and PA.

We propose hypothesis 5 (H5): there is a positive relationship between EL and SA.

We also argue that the firm-size can influence the relationship between EL-EO-SA, acting as a meditator of this relationship. Hence, we propose Hypothesis 6 (H6):

H6a: Firm-size mediates the relationship between EL and A.
H6b: Firm-size mediates the relationship between EL and RT.
H6c: Firm-size mediates the relationship between EL and CA.
H6d: Firm-size mediates the relationship between EL and I.
H6e: Firm-size mediates the relationship between EL and PA.
We propose hypothesis 7 (H7): Firm-size mediates the EL-SA relationship.

METHODOLOGY

A quantitative survey was carried out to test the formulated hypotheses. The present study used structural equation modeling (SEM) to assess the proposed model. SEM provides significant opportunities to generate insights within strategic management, especially in the core constructs of the field (e.g., strategy and entrepreneurship); these are multidimensional and the relationships between them are complex (Shooks et al., 2004). A key strength of SEM is that it allows concomitant psychometric and econometric analyses to be conducted, since these are more suitable for evaluating theoretical models (Fornell & Larcker, 1981). The Partial Least Squares (PLS) modeling is particularly well-suited to many of the problems studied in management (Robins, 2014). The PLS tool is a modeling approach to SEM that is not based on any previous assumption about the data distribution. Thus, the PLS-SEM is a suitable alternative analytical technique whenever the size of the sample is small.

Sampling and Data Collection. We obtained data from a cross-sectional survey of 104 firms in Brazil. The target population – leader was determined for this research study and comprised: owners, presidents, vice-presidents and/or directors. This population was given priority because its members are directly involved in the company's policies and strategy formulation. Data were collected from randomly selected firms (via an online survey by a link with the questionnaire) to measure the five dimensions of the independent variable EO (A, RT, CA, I and PA), the dependent variable (SA), and the antecedent EO variable – EL. The model is depicted in Figure 1.

Figure 1. Investigated model
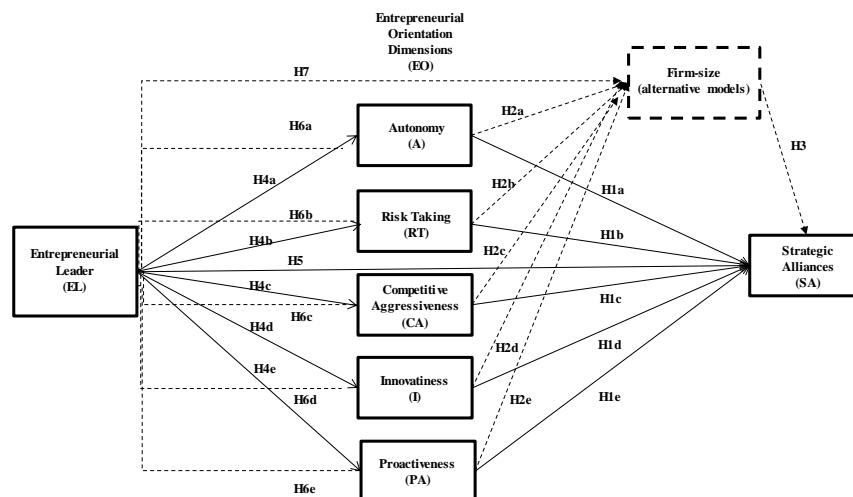
Measurements. Established multiple-item scales were used and the items in the scales were randomly ordered to reduce the survey bias. SA was adapted from Oliveira Junior et al. (2016) and EO was measured by three seven-point Likert-type items. The EO construct was measured by five subdomains: autonomy was adapted from Dess and Lumpkin (2005); innovation adapted from Milher and Friesen (2005); proactivity from Dess and Lumpkin (2005); CA from Covin and Covin (1990); RT from Khandualla (1977 apud Miller & Friesen, 1982) one item, Miller and Friesen (1982) one item, Covin and Slevin (1989) one item. The EL construct was measured by means of five seven-point bipolar items adapted from Filion (2000) and Menz (2012). In other words, when a leader chooses an item higher than 4, he/she

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has a high degree of entrepreneurial behavior. Data regarding firm size and sector were reported by respondents (leaders), in accordance with the parameters set by Sebrae and Dieese (2008), the firm size classifications being: micro, small, medium, and large, depending on the number of employees in the company.

RESULTS AND ANALYSES

The demographic features of the samples are shown in Table 1. The Brazilian Gross Domestic Product (GPD) can be divided into the following sectors: 51% for services, 22% for industry, and 27% for small enterprises – though this sector offers 52% of the jobs (IBGE, 2015) Given these figures, we believe that our sample is roughly proportional to the job activities of the Brazilian population.

Reliability of Measurements. Data demonstrate the robustness of the measurements in terms of internal consistency (Table 2), which is indexed by the reliability that was confirmed by different measurements ranging from .71 to .88, exceeding the recommended value of 0.7 (Fornell & Larcker, 1981). Moreover, in compliance with the guidelines of Fornell and Larcker, the average variance extracted (AVE) for each measurement exceeded .50.

Table 1 Sample

Items	Percentage
Total number of companies	104 (100%)
Large companies	36%
Medium-sized enterprises	13%
Small and micro-sized enterprises	51%
Industry/Construction	22%
Commerce	21%
Services	57%

Table 2 Measurement model assessment

Constructs	AVE	Internal Consistency
SA	0.69	0.82
A	0.76	0.87
RT	0.76	0.90
CA	0.74	0.85
I	1	1
PA	0.77	0.91
EL	0.61	0.76

Discriminant validity. In all the cases, the diagonal elements of the matrix, which represent the square root of the AVEs, are larger than the elements outside of the diagonal line (situated in its corresponding row and column), supporting the scales' discriminant validity (Table 3).

Convergent validity. The convergent validity was evaluated by extracting the factors and the factor loadings of each item for their respective latent constructs. The results (Table 4) show that all the loaded items exceeded both the inferior (0.70) and superior (0.95) limits, i.e., for each item, the construct(s) corresponding to a specific item was/were the largest one(s).

Table 3 Discriminant validity of the construct variables

Latent Variable	SA	A	RT	CA	I	PA	EL
SA	0.83						
A	0.42	0.87					
RT	0.41	0.30	0.87				
CA	0.19	0.32	0.43	0.86			
I	0.07	0.27	0.11	0.29	1.00		
PA	0.19	0.32	0.36	0.66	0.29	0.88	
EL	0.26	0.32	0.45	0.38	0.45	0.28	0.78

Table 4 Factor loading (bold) and cross loading

	SA	A	R	CA	I	PA	TMT
SA1	**0.75**	0.25	0.24	0.05	0.00	-0.03	0.26
SA2	**0.91**	0.43	0.41	0.23	0.09	0.27	0.20
A1	0.23	**0.81**	0.17	0.19	0.25	0.26	0.24
A2	0.46	**0.93**	0.33	0.34	0.24	0.29	0.31
RT1	0.24	0.14	**0.84**	0.30	0.09	0.25	0.42
RT2	0.42	0.35	**0.90**	0.47	0.16	0.38	0.43
RT3	0.37	0.29	**0.87**	0.32	0.04	0.28	0.30
CA2	0.15	0.40	0.36	**0.87**	0.38	0.74	0.35
CA3	0.18	0.14	0.38	**0.85**	0.11	0.38	0.30
I1	0.07	0.27	0.11	0.29	**1.00**	0.29	0.45
PA1	0.17	0.22	0.25	0.46	0.27	**0.89**	0.23
PA2	0.19	0.38	0.41	0.68	0.27	**0.86**	0.24
PA3	0.13	0.22	0.28	0.59	0.24	**0.87**	0.25
EL2	0.09	0.17	0.30	0.29	0.40	0.22	**0.73**
EL3	0.30	0.32	0.39	0.31	0.31	0.22	**0.83**

Validation of the Sample. According to Hair et al. (2009), factor loadings above 0.70 confirm significance in samples in which the number of records is higher than 60. Moreover, Chin, Marcolin and Newsted (2003) suggest that the desired sample size should be 10 times the number of constructs assessed. In our case the minimum sample size would be 70. Thus, our sample of 104 companies confirm that it is suitable for the purposes of the present study.

Testing Hypotheses (H1). The results of the structural model without the influence of the EO antecedent variable (TMEB) showed that the beta coefficients of autonomy (b= .345, p< .01) and risk- taking (b= .300, p< .05) were positive and significant. The other EO variables [CA (b=-.068), I (beta=-.080) and PA (beta= .017)] did not show a significant

impact on SA. Therefore, the dimensions of the EO construct: autonomy and risk- taking had a positive influence on SA. The H1a and H1b hypothesis was supported in this way. Moreover, on the basis of the definition given by Lumpkin and Dess' EO that before a firm can be regarded as entrepreneurially orientated, it needs at least one of the five EO dimensions, the results were satisfactory and supportive of the multidimensionality of the EO construct. The results of the structural model are given in Figure 2, where the beta values of all the path coefficients are shown and the beta values of the significant paths are indicated.

Evaluating Model Fit. The model explained 27.3% of the EO variance in SA, which makes it a strong and reliable in the area of strategy and entrepreneurship, since according to Cohen (1988) a $R^2 > 26\%$ indicates a large effect size and an excellent explanatory power.

Figure 2. Structural model results

Note: Path coefficients.
** Significant: $p < 0.05$
*** Significant: $p < 0.01$
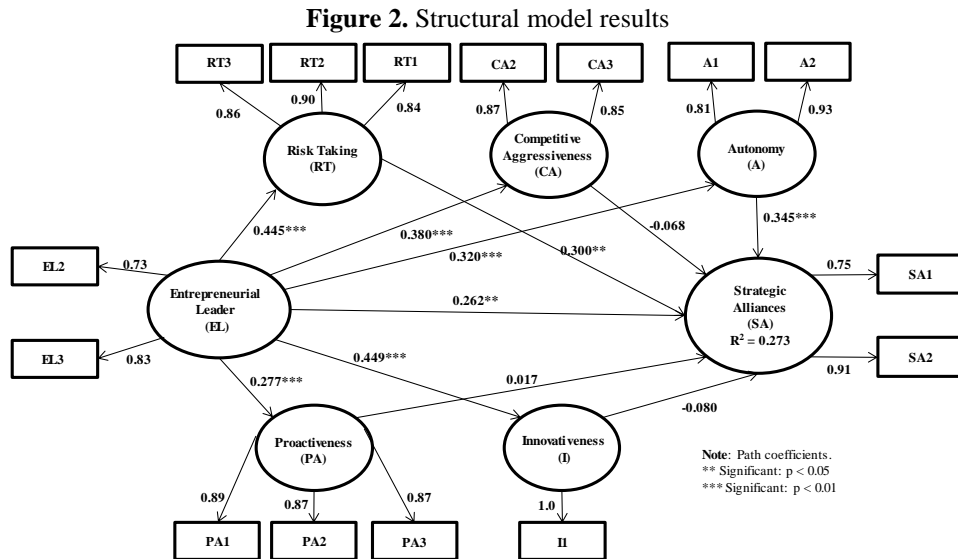
Testing Hypotheses (H2) - Evaluating Alternative Models. Alternative models were designed to explicate the non-significance between some of the EO dimensions (CA, PA and I) and the SA relationship, and these took account of the firm-size (small, medium and large) and acted as a mediator in the EO/SA relationship. Thus, three models were tested as a dichotomous variable for the firm-size (i.e. small, medium and large). In the case of all these three alternative models, we adopted the same procedure as that used for the main model and all of them exceeded the reliability, discriminant and convergent validity and model fit.

As can be seen in Table 5, autonomy has an effective and positive relationship with SA for all three models: small (b= 2.31, p< .05), medium (b= 3.20, p< .001) and large (b= 2.38, p< .05). Moreover, in the case of the small model, autonomy had an indirect effect for small-size enterprises (b= 1.83, p< .10). These results support those of the original model where autonomy plays a really important role in offering SAs for the SMEs. RT dimension had a direct effect on SAs for medium-sized enterprises (b= 2.50, p< .05) which corroborated the results of the original model where RT also had a direct effect. In the case of large companies, RT also had an indirect and negative effect on SA (b= 1.80, p< .10).

The CA had an indirect and negative effect on SA for small-size enterprises (b= 2.20, p< .05) and an indirect and positive effect on SA for large companies (b= 3.47, p< .001). The negative effect on SA for small business can be explained by the way these enterprises deal with their competitors to form possible SAs. They often take up a very aggressive positioning and usually initiate activities which are then copied by their competitors; moreover, they are the first to introduce new products / services / technology / management techniques. Thus, if they adopted an extremely aggressive stance, it could destroy the business and make them isolated in the market. Thus, the lower the degree of competitiveness in these businesses, the healthier will be the relationship and greater the opportunity for SAs.

What was really surprising was the fact that innovativeness did not show any relationship with SAs in any of the alternative models. One possible explanation for this absence could be the moderating effect of the age of the firm on the SAs and the development of new products (Alvarez, Ireland, & Reuer, 2006). Another possible reason is that the traditional sectors made up most of the sample. Moreover, traditionally SMEs in Brazil have been weak in the area of innovation (IBGE 2013). In our experiments, PA had an indirect and positive effect on SAs for small-sized enterprises (b= 2.18, p< .05) and an indirect and negative effect on SAs for large companies (b= 2.54, p< .05). Thus, it seems that in the case of small-sized, companies try to anticipate trends by predicting their customers' future needs; they strive to be the "first in" so that they can reap all the benefits of being a pioneer in its field; they seek to offer new products/services/technologies which helps in forming SAs.

Testing Hypotheses (H3). Considering the direct effect of firm-size on SA, the results show that, the beta coefficient of the firm-size has a positive and significant effect (b= 2.21, p< .05) for medium-size firm and a negative and significant effect (b= 1.81, p<.10). Thus, the hypotheses H3 was accepted (Table 5).

Table 5. Alternative models for H1, H2 and H3

	Small	Medium	Large
H1a: A -> SA	2.3092**	3.2019***	2.375**
	(0.3039)	(0.3438)	(0.2820)
H2a: A -> Size	1.832*	0.0456	1.617
	(0.2021)	(0.0052)	(-0.1540)
H1b: RT -> SA	1.5368	2.496**	1.396
	(0.2172)	(0.2969)	(0.2070)
H2b: RT -> Size	0.9928	0.9951	1.796*
	(-0.3151)	(-0.1193)	(0.3970)
H1a: CA -> SA	0.3011	0.4863	0.224
	(-0.051)	(-0.0643)	(-0.039)
H2c: CA -> Size	2.197**	0.6696	3.466***
	(-0.1111)	(0.0013)	(0.0910)
H1d: I -> SA	0.4343	0.7743	0.386
	(0.0496)	(-0.0823)	(0.0470)
H2d: I -> Size	0.9895	0.0111	0.877
	(-0.1111)	(0.0013)	(0.0910)
H1e: PA -> SA	1.3886	0.0597	1.312
	(0.2459)	(0.0088)	(0.2590)
H2e: PA -> Size	2.184**	0.22	2.538**
	(0.3072)	(0.0343)	(-0.3700)
H3: Size -> SA	1.8118*	2.2123**	0.479
	(-0.1679)	(0.1668)	(0.0440)
Number of observations	104	104	104
R-Square	0.296	0.297	0.269

Notes: in brackets are the path coefficients
*p < .10
**p < .05
***p < .01

Table 6. Alternative models for H5 and H6

	Small	Medium	Large
H6a: EL -> A	3.8295***	3.6005***	3.162***
	(0.3696)	(0.3196)	(0.3080)
H6b: EL -> RT	5.7159***	5.6069***	4.773***
	(0.4425)	(0.4450)	(0.4380)
H6c: EL -> CA	3.4054***	4.0516***	3.739***
	(0.3479)	(0.3767)	(0.3480)
H6d: EL -> I	5.3474***	5.0751***	5.377***
	(0.4534)	(0.4489)	(0.4570)
H6e: EL -> PA	2.6174**	2.719***	2.857***
	(0.2773)	(0.2768)	(0.2770)
H7: EL -> SA	1.717*	2.6075***	1.744*
	(0.1845)	(0.2639)	(0.1850)
Number of observations	104	104	104
R-Square	0.296	0.297	0.269

Notes: in brackets are the path coefficients
*p <.10
**p <.05
***p< .01

Testing Hypotheses (H4). With regard to the effect of the antecedent variable (EL) on EO, the results show that, all the beta coefficients of the EO dimensions were positive and significant: A (b= .320, p< .01), RT (b= .445, p< .01), CA (b= .380, p< .01), I (b= .449, p< .01), PA (b= .277, p< .01). As expected, all the EO dimensions (A, RT, CA, I and PA) related to the EL, showed a positive and significant relationship with SA. Thus, hypothesis H4 was fully acceptable. The entrepreneurial behavior of the leader can be regarded as a central feature of the company since it acts as the antecedent of the EO-SA relationship, as confirmed by several authors (Oliveira Junior et al. 2016; Menz 2012; Simsek, Heavy and Veiga 2010).

Testing Hypotheses (H5). In view of the direct effect of the EL on SA, the results show that, the beta coefficient of the EL has a positive and significant effect (b= .262, p< .05). Thus, the figure of a leader who displays entrepreneurial behaviour is important to the SA and this decision is a strategic choice as, when viewed from the standpoint of top management, the simplest reason that makes firms decide not to form partnerships is the lack of a strategy with regard to alliances (Wittmann 2007; Dickson et al. 2006). Thus, H5 was supported.

Testing Hypotheses (H6 and H7) - Evaluating Alternative Models. What was really impressive and also important is the fact that the EL had a direct positive effect on all the dimensions of EO (A, RT, CA, PA and I) and also on SAs in all three alternative models

(small, medium and large). Moreover, the EL also had a direct and positive effect on SAs in the case of all three models. These results also underline the importance of the entrepreneurial behavior of the top management with regard to SAs for SMEs. However, the firm-size had a direct and negative effect on small-sized enterprises and direct and positive effect on medium-sized enterprises. Thus, H6 and H7 were supported (see Table 6).

CONCLUSION AND IMPLICATIONS

This study is based on the assumption that there is a relationship between Lumpkin and Dess' EO (1996) and SAs which can improve business sustainability and reduce business risks. This relationship can be affected by the company's EL. On the basis of work carried out by the following - Oliveira Junior et al. (2016), Talebi et al. (2015), Bouncken et al. (2014), Jiang et al. (2014), Shu et al. (2014), Franco and Haase (2013), Teng (2005) and Marino et al. (2002), this study found that there is a relationship between EO and SAs as two dimensions (A and RT) of the EO construct five dimensions showed a positive and significant relationship with SA. The results of the relationship between these two dimensions of EO (A and RT) and SA were affected by the EL, which in fact comprises five EO dimensions (A, RT, CA, I and PA) and acted as mediator between EL and SA. Moreover, our findings shed light on the argument of Covin and Lumpkin (2011) that the EO is a multidimensional construct which is influenced by the company's EL. Thus, our results give added support to previous study (Oliveira Junior et al. 2016), in so far as it shows that autonomy has a positive and direct effect on SAs and all five EO dimensions mediated the EL-SA relationship. The result of this study, together with those reported in Oliveira Junior et al. (2016) are consistent with the notion that firms with EO may increase the probability of SA formation.

Admittedly not all of the EO dimensions directly affected the SA, but this does not imply that EO is not important to SAs since according to the definition of EO given by the Lumpkin and Dess' (1996), before a firm can be regarded as entrepreneurially orientated, it must have at least one of the EO dimensions; in our case two dimensions (autonomy and risk-taking) proved to be effective. On this basis, it can be argued that the leader entrepreneurial behaviour influenced all the EO dimensions (A, RT, CA, I and PA) and only autonomy and risk taking had an impact on the question of SAs. It should also be borne in mind that this is a real world and depending on the particular situation (e.g. company-size, environment, etc.) other EO dimensions might be present (as some studies have indicated). For example, Lumpkin and Dess (1996) and Covin et al. (2006) argue that the sector and firm-size can influence the EO dimensions of interest. Dickson et al. (2006) suggests that the resource base of SMEs, when measured by its size, has a moderating effect on the relationship between technology and the prevailing culture of its domestic market, which raises concerns about the opportunistic behaviour that can arise from a partnership with an SME.

We employed alternative models to explain why the other three EO dimensions (CA, PA and I) did not have a relationship with SAs. In fact, CA and PA do have a relationship with SAs when account is taken of the indirect effect of the firm-size. For example, CA had an indirect and negative effect on SA in the case of small business and an indirect and positive effect on SA for large firms. PA also had a relationship with SA when account is taken of the indirect effect of the firm-size. For small-size enterprises, PA had a positive and indirect effect on SA and a negative and indirect effect on SAs for large firms. Only innovativeness did not have any relationship with SA regardless of the indirect effect of the firm-size.

The case of innovativeness (I) is intriguing and worth investigating in future studies, especially because PA (which is a kind of (I) when the company is the first to launch a product or service in the market) had an indirect effect on SAs. One possible explanation for (I) can be found in the results of Rothaermel and Deeds which showed that the type of alliance and the age of the firm has a moderating effect on the relationship between the SA

and the development of new products (Alvarez et al., 2006). Another explanation of why (I) does not have any relationship with SAs, may be the poor capacity Brazilian SMEs have to set aside assets or funds for technological innovation. This may be aggravated by institutional failures in the economic environment that make competitive behavior conservative, with the result that companies are only concerned with reducing risks, economic capitalization and breaking down barriers to market access (Oliveira Junior et al., 2016). In the case of the Greek SME manufacturing sector, the results of a research study showed that market orientation and learning increased their innovative performance; industrial concentration and barriers to entry also had significant effects on the innovative activities of the SMEs (Salavou et al., 2004).

What was of crucial importance is the fact that the EL had a directly positive effect on all the EO dimensions (A, RT, CA, PA and I) on SAs for all the alternative models (small, medium and large). Moreover, the EL also had a direct and positive effect on SAs for all three models. These results underline the importance of the EL with regard to SAs for SMEs.

Contribution to Theory. This study empirically assessed how partnership can be a way of putting entrepreneurial activities into practice, and brought together two study areas: SAs and EO; it sought to fill a theoretical and empirical gap that can be found in the literature of SME. In an attempt to find a link between Lumpkin and Dess' (1996) EO competitive value and its effects on companies' growth patterns, (by leveraging resources and capabilities through SAs), this article showed that autonomy and RT are positively associated with SAs for SMEs in Brazil. This result sheds lights on Covin and Lumpkin's (2011) proposition that EO is a multidimensional construct. Although a complete relationship between EO and SAs is not present, this does not mean that there is a lack of a relationship between them. By employing a multidimensional construct (Lumpkin & Dess, 1996), we showed that autonomous leadership and a capacity for RT by the firms as a part of their EO, can be important when deciding to form an SA. This supports the argument of Lumpkin and Dess (1996) that EO dimensions may be present in certain situations but not in others and this will depend on internal and external factors (Covin et al., 2006; Dickson et al., 2006; Lumpkin & Dess, 1996). Our results suggest that the firm-size mediated the EO-SA relationship for CA and PA.

This result suggests that when a firm makes use of EO, (and in particular, decides to invest in the autonomy of its leaders and RT), this can be an important means of boosting the SAs. Of course, the EL influences SAs, but companies with autonomous ELs, and RT skills, might be more prompt to support the decision to form SA and put this into effect. For this reason, this research seeks to consolidate the EO construct by using it in a reflexive and multidimensional model, as undertaken in the research of Lumpkin and Dess (1996). This is supported by the argument of Covin and Lumpkin (2011) that EO involves real phenomena.

This study draws attention to the entrepreneurial behavior of the leader as an antecedent of the EO effect on the relationship between EO and SAs. EL has a direct influence on SAs and on the development of all EO dimensions (A, RT, CA, I and PA) on SA. Our results suggest that firms should train leaders to acquire entrepreneurial behavior so that they can have EO. Whether or not autonomy and RT are positively associated with SAs, there are other dimensions (CA and PA) that were linked to SAs that take account of the mediating effect of firm-size. It was only innovativeness that did not influence SA and this can be explained by the scales of measurement and environmental context (Covin et al., 2006; Dickson et al., 2006; Lumpkin & Dess, 1996). Although there are different approaches and opinions about the entrepreneur, there are many points of convergence between them. This study provides evidence of this and believes there are potential benefits that can be derived from a closer linkage between entrepreneurial leader and firm's EO and SAs.

In an organizational setting, it is often the leader (i.e. the entrepreneur) who plays the main entrepreneurial role in the search for resources and this goes beyond the usual restraints

imposed on authority and entails an ability to take risks, benefit from new ideas and break down paradigms (Lumpkin & Dess, 1996). So why should the leaders of the firm tolerate autonomy? Autonomy can provide the necessary means for expanding the company's sphere of corporate influence and discover additional synergies in unique combinations of resources (e.g. financial) represented by these companies. In other words, autonomy provides the means to develop and exploit the organizational technology of the company. For this reason, the firm's leadership should allow autonomous groups to take action, and agree to the free exercise of initiatives even if are still not proving successful. This can be carried out by making the necessary changes in the company's structure to stimulate new ideas, enhance creative thinking and encourage decision-making (Burgelman 1983a; Lumpkin & Dess 1996).

Lumpkin and Dess (1996) state that researchers have been failing to find consistency in relations/perceptions in the area of risk-taking in entrepreneurship, whether with regard to the way new businesses are set up or misleading relations between risk taking and performance. Furthermore, most of the studies related to businesses refer to the risk taken by the individual rather than the firm. The risks are mainly found at the level of the individual and then transferred to the level of the firms. The risk-taking by the firm can be shaped by the influence of the individual's perception, attitudes, behaviour and intentions with regard to risks. The examples where risk-taking by the firm might lead to a better performance when it involves SAs are as follows: (1) adopting an aggressive positioning can maximize the chance of being able to exploit potential opportunities; (2) a strong tendency to undertake risky projects with the prospect of obtaining very high returns; and (3) adopting a bold approach in which large-scale activities are needed to achieve the company's goals.

Managerial Implications. Strategic alliances are important throughout the company's life cycle for economy of scale, improving profit margins, increasing sales and business growth. In the case of SME and businesses that are just starting up, forming an SA can be a means of obtaining access to financial investment. Moreover, a firms' expansion has a direct impact on growth. The main reason for this is that, from the beginning, businesses have a limited capacity to invest, grow, share risks and expand in a competitive market by increasing their resources base. However, depending on which firm forms the partnership, the SA can become a major problem for the firm and, thus, the success of the SA is very important for the partners' credibility. Moreover, when this strategic alliance works, it can be used as a way of reducing or eliminating uncertainties and building barriers to entry. At the same time, reliance on only one or a few customers can become a serious problem for business continuity.

Limitations and future research. Our scales relied on subjective measurements, although we took great care in the data analysis (by applying robustness checks and bias reduction). Future research could determine the value of the EO-SA relationship through combining a survey with secondary data, or other mediating or moderating factors that can influence this relationship. Our hope is that the EO-SA approach outlined here will encourage researchers to address the influence of specific EO dimensions (e.g., CA, PA and, in particular, innovativeness) on SA that might moderate or mediate these influences.

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